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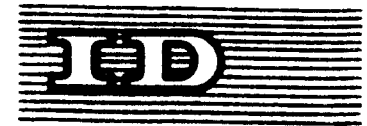
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COUNTRY PAPER OF FEASIBILITY STUDIES
IN SELECTED LEAST DEVELOPED COUNTRIES ON
PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN *

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PART I

(a) Industrial development planning in PDRY is undertaken in accordance with the broad-based national socio-economic objectives, through its Five Year Development Plans, aiming transformation of one time service economy to a productive one for ameliorating the conditions of people. The responsibility of initiating industrial projects is mainly shouldered by the Ministry of Industry in conjunction with other Ministries such as Agricultural, Construction etc. The ideas are formulated on the basis of;

- i) Consumption requirements i.e. flour, bread, beverages etc.
- ii) Utilisation of agricultural and mineral and other resources, i.e. textiles, Tomato Paste etc.
- iii) Analysis of imports justifying import substitution i.e. re-inforcing mild steel bars etc.
- iv) Analysis of export potential

In some cases general surveys carried out by IDCAS or bilateral dialogues have lead to initiation of projects. Similarly in the past four years UNIDO Industrial Advisory Unit have assisted the Ministry in this matter.

(b) The Government of PDRY in their Ministry of Industry and Ministry of Planning are the substantive institutions concerned with industrial development. Institutions like Industrial Development Bank, Industrial Centres have yet to emerge. The legislation allows establishment of industrial undertaking by foreign investors and local entrepreneurs. However, the emphasis of the centrally planned economy of the Republic is on stepping up of the public sector. None-the-less private entrepreneurs have a share of over 30% in the Industrial production.

Initiation of projects is mainly done by the Ministry of Industry. As regards implementation, the Ministry of Industry in addition to executing the projects themselves also avail of assistance of machinery and plant suppliers through direct, bilateral or multilateral arrangements. Evaluation of pre-investment studies is also done by the Ministry. This responsibility in certain cases has been entrusted to UNIDO as well. Similarly some studies have been carried out under the aegis of Arab Fund or Kuwait Fund at the instance of the Government of PDRY.

(c) The major difficulties confronted in generating an effective system of project formulation, project evaluation and project implementation are enumerated as under :-

- (1) Lack of infrastructure in general
- (2) Absence of institutions such as consultancy services, Industrial Development Bank, Industrial Development Centres etc.
- (3) Inadequate manpower in the entire hierarchy i.e.
 - i) Planners / technocrats to conceive needs and appropriateness for general opportunity studies, pre-feasibilities studies.
 - ii) Top Executives (General Manager) and second level supervisor needed for pushing forward projects with initiative and drive.
 - iii) Technocrats / Technicians for operating the plants.
 - iv) Skilled manpower.
- (4) Lack of adequate data needed for systematic analysis and planning.
- (5) Absence of marketing expertise capable of conducting market surveys for assessing domestic needs and export potentialities.
- (6) Unilateral focus of attention of financiers or machinery suppliers restricting the scope of supplies. The financiers are more concerned on economic profitability rather than with consumers' interest whereas machinery suppliers tend to prepare projects with pre-determined angle of such supplies.
- (7) In the past projects emerging under bilateral arrangements were implemented mostly under the Aid giving Agency without much of an elaborate feasibility study and evaluation of offers for plant and machinery carried out in-depth. This is understandable as the donor country is the sole agency for effecting such supplies resulting in only narrow range of such supplies.

A flow chart showing inter relationship between various governmental agencies and decision making process is placed at Exhibit A.

PART II

Of the feasibility studies under consideration in the country, the study on clay brick making plant has been selected as a case study, a brief history of which is as follows:-

A study towards the scope and feasibility of establishment of a brick plant was conducted in 1976 by a UNIDO Expert. He recommended; (a) a plant of 15 million units of bricks, (b) the location of plant in the 1st Governorate. The project looking attractive the Ministry of Industry contacted machinery suppliers. A foreign supplier arrived at cost of a unit (brick) at 80 fils which was high when compared to a cement block. Fresh investigations were used for 30 million units capacity plant in view of :-

- (a) high cost of production;
- (b) demand projections made earlier overlooked the requirements of stores, bridges & canals;
- (c) improvements have since taken place in the transport and communication net-work which hitherto was a bottleneck in haulage of raw materials & finished product. The cost of transportation is very insignificant, a fil per unit of brick;
- (d) the plant earlier contemplated for meeting the requirements of 1st Governorate only could now cater for 2nd and 3rd Governorates as well.

At the same time the study aimed at bringing down the price per unit by possible change of process reducing oil consumption and with operational efficiency. The difficulties encountered in connection with the study in question are enumerated below:-

MARKET AND PLANT CAPACITY

High grade clay bricks are not presently being manufactured in PDRY at a factory scale. Only low grade bricks are being made in a small factory. The question of assessing existing size and capacities of the industry does not, therefore, arise.

As regards demand, the annual consumption was estimated at 53 - 62 million bricks. In view of the large area of the country, more than one plant have to be installed in relation to sources of raw materials consumption centres and other economic factors. A couple of studies carried out have identified capacity of the first plant of various levels but the final capacity could not be firmed up till recently on account of lack of sufficient data, fast changing pattern of transport and communication network etc. Plant capacity has, however, now been determined at 30 million bricks per annum.

SALES AND MARKETING

The studies carried out have not gone into the area of sales and marketing of bricks. Although in a centrally planned economy bulk of demand emerges from public sector sources such as Ministry of Construction and no elaborate sales organisation are needed, yet the subject merited discussion and coverage for portion of supplies to be directed to the open market for private sector needs.

TECHNOLOGY AND PROCESSES

In this area a good deal of problem was confronted. The consultants developed studies on costly utilities and processes resulting in high cost of production. It was on indirect pressure for the Ministry emphasising towards reduced cost of production that the consultants suggested alternate use of cheaper fuel oil i.e. heavy fuel oil instead of diesel oil. So also methodology of reduction in water consumption was arrived at. The savings as a result of fuel oil amounted to .155 million YD (from .280 million YD to .125 million YD) and of water consumption at .125 million YD (from .415 million YD to .291 million YD).

CIVIL ENGINEERING WORKS

The site of building costs computed were unrealistic and on high side. Scrutiny by Ministry revealed that the site and building could be possibly brought down by .740 million YD i.e. nearly 50% of the total estimated cost.

PRODUCTION COST

Following from earlier fact re the production cost has been varying widely. Whereas in the initial study the consultant / suppliers arrived at costs leading to fixation of a selling price at 80 fils per brick, they worked out the production costs on four different basis i.e.

- (a) with depreciation and interest,
- (b) with interest without depreciation,
- (c) with depreciation without interest,
- (d) without depreciation without interest ,

fixing selling price at 40 fils per brick. These models are placed at Exhibit B. Obviously they left the field wide open leading to difficulties in decision making. In ultimate analysis the Ministry, in consultation with consultants, worked out revised production cost on the basis of:-

- i) 30 million bricks capacity
- ii) Revised cost of utilities
- iii) Revised cost of site and building
- iv) Revised depreciation span

The updated study now permits a suitable selling price of 32 fils per brick with following features.

Internal Rate of Return	=	13.7%
Breakeven point (without interest & depreciation)	=	49% of capacity
Breakeven point (with interest & depreciation)	=	83% of capacity

PART III

The following recommendations are offered for strengthening the capabilities in the preparation of feasibility studies.

1) Streamlining of collection, compilation and retrieval of data in respect of all important sectors of economy;

2) Developing consultancy competence of the Department of Investment and construction of Ministry of Industry for undertaking preparation of techno-economic feasibility studies particularly by way of training of nationals in the following fields :-

- (a) Economic and Financial Analysis,
- (b) Mechanical Engineering including erection,
- (c) Civil Engineering including construction,
- (d) Project Appraisal, and

provision for technical help to be made available to the Ministry of Industry on emergency basis for obtaining consultants services in the specific field of study, for a short period assignment, say one month or so.

3) Making the existing Chamber of Commerce and Industry an effective organ in projecting views of Trade and Industry enabling brainstorming of leaders in all sectors concerned in conceiving new needs, sharing experience and knowledge;

4) Exchange of information with other developing countries on project planning processes followed by them;

5) Developing expertise in marketing techniques for conduct of market surveys (industrial survey, consumer surveys and trade surveys etc.) enabling identification of scope for expansion and or creation of new capacities for domestic and export markets.

PART IV

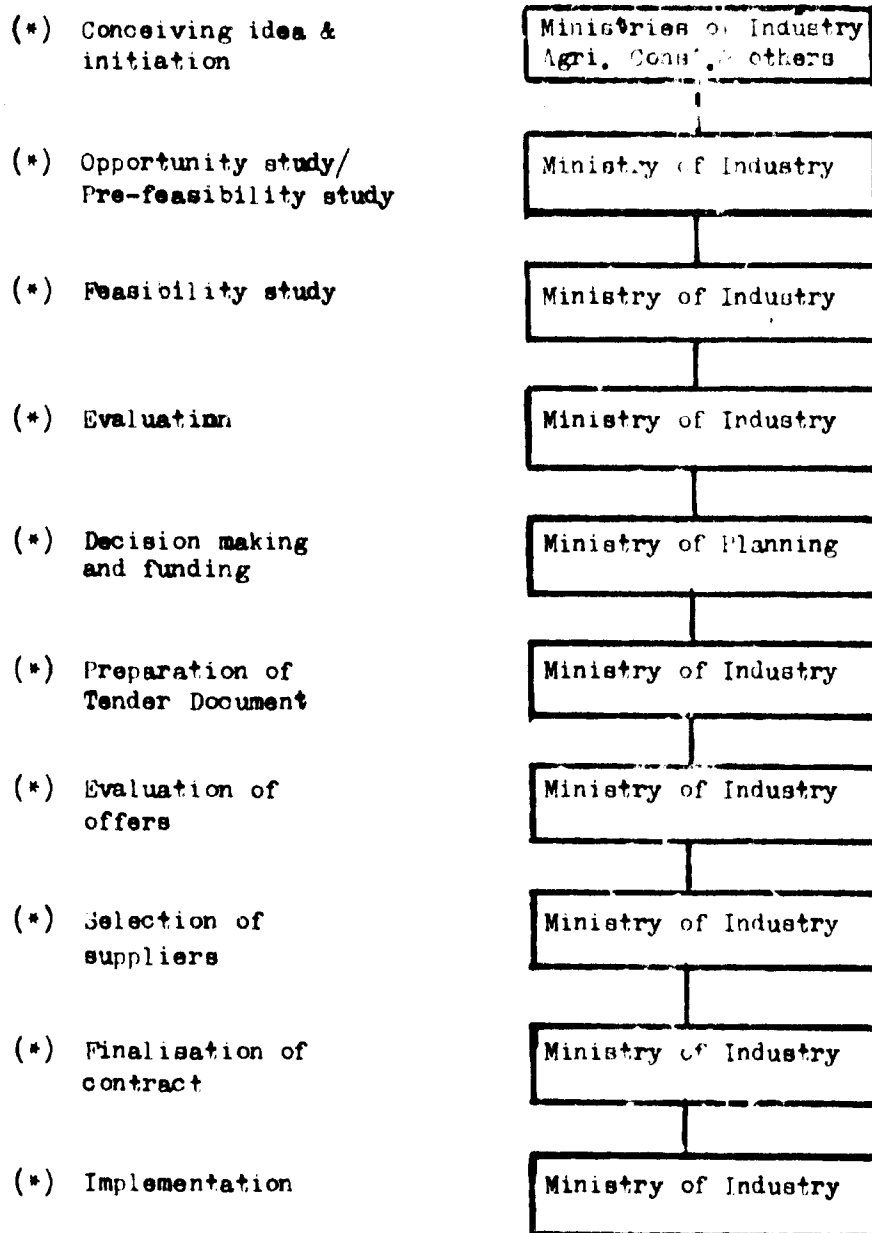
A brief study was conducted on the possibilities of establishing a can manufacturing plant by IDCAS almost in a Project Profile form. This study leaves much to be desired both technically and economically. This is an area where a detailed feasibility study needs to be carried out.

A techno-economic study was prepared by a UNIDO expert in 1976, envisaging the setting up of a knitwear plant with an annual capacity of 848,000 dozen pieces of hosiery goods, 470,000 meters of knitted fabrics and 500,000 meters of towel cloth. The author, inter alia, recommended simultaneous creation of capacity for the manufacture of major raw material viz. cotton yarn to be used by the proposed knitwear plant. The analysis, however, revealed that there was a discrepancy between the projected output levels of the knitwear plant and the actual consumption.

The following basic issues merit re-examination and updating of the study:-

- (a) Assessment of consumption of knitwear products, present and future;
- (b) Export potential of any of the products in neighbouring countries;
- (c) Determination of an appropriate plant capacity in the light of (a) & (b) above.

FLOW CHART SHOWING INTER-RELATIONSHIP BETWEEN VARIOUS
GOVERNMENTAL AGENCIES AND DECISION MAKING PROCESS IN
P. D. R. Y.



Note:- In Ministry of Industry all jobs given above are looked after by Department of Investment and Construction.

EXHIBIT B

PRODUCTION COST MODELS(AT SELLING PRICE OF 40 FILS PER PIECE)

MODELS YEARS	MODEL A		MODEL B		MODEL C		MODEL D	
	With Depreciation Interest		With Interest without Depreciation		With Depreciation without Interest		Without Interest without Depreci- ation	
	Cost (fils)	Profit %	Cost (fils)	Profit %	Cost (fils)	Profit %	Cost (fils)	Profit %
1.	52.9	None	39.1	2.19	37.5	6.28	23.7	40.66
2.	50.7	None	37.0	11.97	36.9	12.20	23.1	44.95
3.	49.8	None	36.0	18.27	37.5	14.99	23.7	46.8
4.	48.9	None	35.2	24.03	38.2	17.59	24.4	47.29
5.	48.1	1.0	34.4	29.29	38.9	19.99	25.1	48.28
6.	46.3	9.21	33.7	34.07	38.7	24.29	26.0	49.15
7.	45.7	14.74	33.0	38.41	39.5	26.22	26.9	49.87
8.	45.2	19.78	32.5	42.33	40.5	27.98	27.8	50.53
9.	44.7	24.37	32.0	45.85	41.6	29.58	28.9	51.05
10.	44.3	28.53	31.7	48.98	42.8	31.01	30.1	51.46

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